

1. (Currently Amended) An optical network system for supporting multiple service providers, comprising:

a data service hub comprising:

a first optical transmitter for modulating a first analog optical carrier having a first wavelength with a first electrical, analog broadcast radio-frequency signal of a first service provider;

a second optical transmitter for modulating a second analog optical carrier having a second wavelength with ~~[[the]]~~ a second, analog electrical broadcast radio-frequency signal of a second service provider;

a third optical transmitter for modulating a digital optical carrier having a third wavelength with a digital data signal;

a first optical waveguide coupled to the data service hub and a laser transceiver node for receiving the first analog optical carrier and propagating it to the laser transceiver node;

a second optical waveguide coupled to the data service hub and the laser transceiver node for receiving the ~~[[first]]~~ second analog optical carrier and propagating it to the laser transceiver node~~[[,]]~~;

a third optical waveguide coupled to the data service hub and the laser transceiver node for receiving the digital optical carrier and propagating it to the laser transceiver node, the laser transceiver node comprising a first combiner for mixing the first and second analog optical carriers and a second combiner for mixing the digital optical carrier with the combined first and second analog optical carriers;

a ~~third~~ fourth optical waveguide coupled to the laser transceiver node and a subscriber optical interface for receiving the combined first and second analog optical carriers and digital optical carrier and propagating them to the subscriber optical interface; and

the subscriber optical interface comprising a service provider selection device for selecting one of the analog optical carriers.

2. (Currently Amended) The system of Claim 1, wherein the subscriber optical interface comprises an analog optical receiver for converting the selected analog optical carrier into electrical, analog broadcast radio-frequency signals.

3. (Currently Amended) The system of Claim 1, further comprising a broadcast receiver for demodulating analog electrical broadcast radio-frequency signals.
4. (Original) The system of Claim 1, wherein the service provider selection device comprises an optical filter.
5. (Currently Amended) The system of Claim 1, wherein the first combiner of the laser transceiver node comprises a wavelength division multiplexer for combining the first and second analog optical carriers.
6. (Cancelled).
7. (Currently Amended) The system of Claim 1, wherein the subscriber optical interface comprises an optical diplexer for separating the first and second analog optical carriers from ~~[[a]]~~the digital optical carrier.
8. (Currently Amended) The system of Claim 1, wherein the analog broadcast radio-frequency signals comprise at least one of analog television broadcast signals, analog radio broadcast signals, and high density television broadcast signals.

[The remainder of this page has been intentionally left blank.]

9. (Currently Amended) A method for supporting broadcast signals from multiple sources operating within a single optical network, comprising:

modulating a first analog optical carrier having a first wavelength with a first electrical, analog broadcast radio-frequency signal at a data service hub from a first service provider;

modulating a second analog optical carrier having a second wavelength with [[the]]a second electrical, analog broadcast radio-frequency signal at the data service hub from a second service provider;

modulating a digital optical carrier having a third wavelength with digital data signal at the data service hub;

propagating the first and second analog optical carriers and digital optical carrier through separate optical waveguides away from the data service hub;

combining the first and second analog optical carriers and the digital optical carrier;

propagating the first and second analog optical carriers and digital optical carrier through one optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at a subscriber optical interface.

10. (Currently Amended) The method of Claim 9, further comprising converting the selected analog optical carrier into electrical analog broadcast radio-frequency signals.

11. (Currently Amended) The method of Claim 10, further comprising demodulating the electrical analog broadcast radio-frequency signals with a broadcast receiver.

12. (Original) The method of Claim 9, wherein selecting one of the analog optical carriers at the subscriber optical interface comprises selecting one of the analog optical carriers by optical filtering.

13. (Original) The method of Claim 9, wherein combining the first and second analog optical carriers comprises combining the optical signals through wavelength division multiplexing.

14. (Cancelled.)

15. (Currently Amended) The method of Claim [[14]]9, further comprising separating the first and second analog optical carriers from the digital optical carrier at a subscriber optical interface.

16. (Currently Amended) A system for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

a data service hub comprising:

a first optical transmitter for modulating a first analog optical carrier having a first wavelength with a first electrical, analog broadcast radio-frequency signal of a first service provider;

a block converter for translating a frequency range of a second electrical, analog broadcast radio-frequency signal of a second service provider;

a second optical transmitter for modulating a second analog optical carrier having a second wavelength with the second electrical, analog broadcast radio-frequency signal;

a combiner for mixing the first and second analog optical carriers;

a first optical waveguide for communicating the first and second analog optical carriers to a node;

a third optical transmitter for modulating a digital optical carrier having a third wavelength with a digital data signal;

a second optical waveguide coupled to the data service hub and the laser transceiver node for receiving the digital optical carrier and propagating it to the node; and

a subscriber optical interface coupled to the node and comprising a service provider selection device for selecting one of the analog optical carriers.

17. (Currently Amended) The system of Claim 16, wherein the subscriber optical interface further comprises an analog optical receiver for converting the selected analog optical carrier into an electrical, analog broadcast radio-frequency signal.

18. (Original) The system of Claim 16, wherein the service provider selection device comprises a block converter.

19. (Currently Amended) The system of Claim 16, further comprising a broadcast receiver for demodulating electrical, analog broadcast radio-frequency signals.
20. (Original) The system of Claim 16, wherein the service provider selection device comprises an optical filter.
21. (Original) The system of Claim 16, wherein the combiner comprises a wavelength division multiplexer.
22. (Currently Amended) The system of Claim 16, wherein the node further comprises a diplexer for mixing the first and second analog optical carriers with ~~[[a]]~~the digital optical carrier.
23. (Currently Amended) The method of Claim 16, wherein the subscriber optical interface comprises a diplexer for separating the first and second analog optical carriers from the digital optical carrier.
24. (Currently Amended) The system of Claim 16, wherein the electrical, analog broadcast radio-frequency signals comprise at least one of analog television broadcast signals, analog radio broadcast signals, and high density television broadcast signals.
25. (Original) The system of Claim 16, wherein the service provider selection device comprises a block converter, the block converter comprising a local oscillator, a mixer, and a filter.

[The remainder of this page has been intentionally left blank.]

26. (Currently Amended) A method for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

modulating a first analog optical carrier having a first wavelength with a first electrical, analog broadcast radio-frequency signal of a first service provider at a data service hub;

translating a frequency range of a second electrical, analog broadcast radio-frequency signal of a second service provider;

modulating a second analog optical carrier having a second wavelength with the second electrical, analog broadcast radio-frequency signal at the data service hub;

combining the first and second analog optical carriers at the data service hub;

propagating the first and second analog optical carriers through ~~[[one]]~~ a first optical waveguide towards a subscriber;

modulating a digital optical carrier having a third wavelength with a digital data signal at the data service hub;

propagating the digital optical carrier through a second optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at a subscriber optical interface.

27. (Currently Amended) The method of Claim 26, further comprising converting the selected analog optical carrier into an electrical, analog broadcast radio-frequency signal.

28. (Currently Amended) The method of Claim ~~[[26]]~~27, further comprises translating a frequency range of the converted electrical, analog broadcast radio-frequency signal.

29. (Currently Amended) The method of Claim 26, further comprising demodulating the electrical, analog broadcast radio-frequency signals with a broadcast receiver.

30. (Original) The method of Claim 26, wherein selecting one of the analog optical carriers at the subscriber optical interface comprises selecting one of the analog optical carriers by optical filtering.

31. (Original) The method of Claim 26, wherein combining the first and second analog optical carriers comprises combining the optical signals through wavelength division multiplexing.

32. (Currently Amended) The method of Claim 26, further comprising combining the first and second analog optical carriers with ~~[[a]]~~the digital optical carrier.

33. (Original) The method of Claim 26, further comprising separating the first and second analog optical carriers from the digital optical carrier at a subscriber optical interface.

[The remainder of this page has been intentionally left blank.]

34. (Currently Amended) A system for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

a data service hub comprising:

a block converter for translating a frequency range of a first electrical, analog broadcast radio-frequency signal of a first service provider;

an electrical combiner for combining the first electrical broadcast signal with a second electrical, analog broadcast radio-frequency signal of a second service provider;

a[[n]]first optical transmitter for modulating an analog optical carrier having a first wavelength with the combined first and second electrical, analog broadcast radio-frequency signals;

a first optical waveguide coupled to the data service hub for receiving analog optical carrier and propagating it towards a subscriber;

a second optical transmitter for modulating a digital optical carrier having a second wavelength with a digital data signal;

a second optical waveguide coupled to the data service hub for receiving the digital optical carrier and propagating it towards a subscriber; and

a[[n]] third optical waveguide for communicating the analog optical carrier and digital optical carrier to a subscriber optical interface; the subscriber optical interface comprising a service provider selection device for choosing one of the analog optical carriers.

35. (Currently Amended) The system of Claim 34, wherein the subscriber optical interface comprises an analog optical receiver for converting the selected analog optical carrier into an electrical, analog broadcast radio-frequency signal.

36. (Currently Amended) The system of Claim 34, wherein the subscriber optical interface further comprises a block converter for translating a frequency range of electrical, analog broadcast radio-frequency signals.

37. (Currently Amended) The system of Claim 34, wherein the subscriber optical interface further comprises a broadcast receiver for demodulating electrical, analog broadcast radio-frequency signals.

38. (Original) The system of Claim 34, wherein service provider selection device comprises a block converter.

39. (Original) The system of Claim 34, further comprising a combiner for mixing the analog optical carrier with a digital optical carrier.

40. (Currently Amended) The system of Claim 34, wherein the subscriber optical interface comprises a diplexer for separating the analog optical carrier from ~~[[a]]the~~ digital optical carrier.

41. (Currently Amended) A method for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

generating a first electrical, analog broadcast radio-frequency signal with a first service provider;

translating a frequency range of a second electrical, analog broadcast radio-frequency signal of a second service provider;

combining the first and second ~~analog~~ electrical, analog broadcast radio-frequency signals at the data service hub;

modulating an analog optical carrier having a first wavelength with the first and second electrical, analog broadcast radio-frequency signals at the data service hub;

propagating the analog optical carriers through ~~[[one]]~~ a first optical waveguide towards a subscriber;

modulating a digital optical carrier having a second wavelength with a digital data signal at the data service hub;

propagating the digital optical carrier through a second optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at a subscriber optical interface.

42. (Currently Amended) The method of Claim 41, further comprising converting the selected analog optical carrier into an electrical, analog broadcast radio-frequency signal.

43. (Currently Amended) The method of Claim [[41]]42, further comprising translating a frequency range of the converted electrical, analog broadcast radio-frequency signal.
44. (Currently Amended) The method of Claim 41, further comprising demodulating the electrical, analog broadcast radio-frequency signals with a broadcast receiver.
45. (Currently Amended) The method of Claim 41, wherein selecting one of the analog optical carriers at the subscriber optical interface comprises translating a frequency range of the converted electrical, analog broadcast radio-frequency signal.
46. (Currently Amended) The method of Claim 41, further comprising combining the analog optical carrier with [[a]]the digital optical carrier.
47. (Currently Amended) The method of Claim 41, further comprising separating the analog optical carrier from the digital optical carrier at a subscriber optical interface.

[The remainder of this page has been intentionally left blank.]

48. (Currently Amended) A system for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

a data service hub comprising:

a[[n]] first optical transmitter for modulating a first analog optical carrier having a first wavelength with a first electrical broadcast radio-frequency signal of a first service provider, the first electrical broadcast radio-frequency signal having a first frequency range occupied by analog broadcast radio-frequency signals and a second frequency range occupied by digital broadcast radio-frequency signals;

a second optical transmitter for modulating a second analog optical carrier having a second wavelength with a second electrical broadcast radio-frequency signal of a second service provider, the second electrical broadcast radio-frequency signal having a first frequency range occupied by digital broadcast radio-frequency signals and a second frequency range occupied by analog broadcast radio-frequency signals, the frequency ranges of the second electrical broadcast radio-frequency signal being opposite to the frequency ranges of the first electrical radio-frequency broadcast signal at least in some channels;

a combiner for mixing the first and second analog optical carriers;

a third optical transmitter for modulating a digital optical carrier having a third wavelength with a digital data signal;

an optical waveguide for communicating the first and second analog optical carriers and digital optical carrier from the data service hub to a subscriber optical interface, the subscriber optical interface comprising a service provider selection device.

49. (Currently Amended) The system of Claim 48, wherein the subscriber optical interface further comprises an analog optical receiver for converting the selected analog optical carrier into an electrical broadcast radio-frequency signal.

50. (Original) The system of Claim 48, wherein the service provider selection device comprises an optical filter.

51. (Currently Amended) The system of Claim 48, further comprising a broadcast receiver for demodulating electrical broadcast radio-frequency signals.

52. (Currently Amended) The system of Claim 48, further comprising a diplexer for combining the analog optical carrier with [[a]] digital optical carrier.

53. (Original) The system of Claim 48, wherein the subscriber optical interface further comprises a diplexer for separating the analog optical carrier from digital optical carrier.

54. (Currently Amended) A method for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

selecting a first frequency range for a first electrical broadcast radio-frequency signal of a first service provider;

selecting a second frequency range for a second electrical broadcast radio-frequency signal of a second service provider that is different from the first frequency range;

modulating a first analog optical carrier having a first wavelength with the first electrical broadcast signal at a data service hub;

modulating a second analog optical carrier having a second wavelength with the second electrical broadcast signal at the data service hub;

modulating a digital optical carrier having a third wavelength with a digital data signal at the data service hub;

propagating the first and second analog optical carriers and digital optical carrier through one optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at the subscriber.

55. (Original) The method of Claim 54, further comprising combining the first and second analog optical carriers at the data service hub.

56. (Currently Amended) The method of Claim 54, further comprising converting the selected analog optical carrier into an electrical broadcast radio-frequency signal.

57. (Original) The method of Claim 54, wherein selecting one of the analog optical carriers at subscriber comprises selecting one of the analog optical carriers by optical filtering.

58. (Currently Amended) The method of Claim 54, further comprising demodulating the electrical broadcast radio-frequency signals with a broadcast receiver.

59. (Currently Amended) The method of Claim 54, further comprising combining the analog optical carriers with ~~[[a]]~~the digital optical carrier.

60. (Currently Amended) The method of Claim 59, further comprising separating the analog optical carriers from the digital optical carrier at the subscriber.

61. (Currently Amended) A method for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

generating a first and second analog broadcast radio-frequency signals from respective first and second service providers;

locking a phase of the second analog broadcast radio-frequency signal relative to a phase of the first analog broadcast radio-frequency signal;

modulating a first analog optical carrier having a first wavelength with the first analog broadcast radio-frequency signal at a data service hub;

modulating a second analog optical carrier having a second wavelength with the second analog broadcast radio-frequency signal at the data service hub;

modulating a digital optical carrier having a third wavelength with a digital data signal at the data service hub;

propagating the first and second analog optical carriers and digital optical carrier through one optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at the subscriber.

62. (Original) The method of Claim 61, further comprising combining the first and second analog optical carriers at the data service hub.

63. (Currently Amended) The method of Claim 61, further comprising converting the selected analog optical carrier into an electrical analog broadcast radio-frequency signal.

64. (Original) The method of Claim 61, wherein selecting one of the analog optical carriers at subscriber comprises selecting one of the analog optical carriers by optical filtering.

65. (Currently Amended) A method for supporting broadcast signals from multiple service providers operating within a single optical network, comprising:

generating a first and second electrical analog broadcast radio-frequency signals from respective first and second service providers;

off setting a frequency of the second electrical analog broadcast radio-frequency signal relative to the first electrical analog broadcast radio-frequency signal by a predetermined amount;

modulating a first analog optical carrier having a first wavelength with the first electrical analog broadcast radio-frequency signal at a data service hub;

modulating a second analog optical carrier having a second wavelength with the second electrical analog broadcast radio-frequency signal at the data service hub;

modulating a digital optical carrier having a third wavelength with a digital data signal at the data service hub;

propagating the first and second analog optical carriers and digital optical carrier through one optical waveguide towards a subscriber; and

selecting one of the analog optical carriers at the subscriber.

66. (Original) The method of Claim 65, further comprising combining the first and second analog optical carriers at the data service hub.

67. (Currently Amended) The method of Claim 65, further comprising converting the selected analog optical carrier into an electrical analog broadcast radio-frequency signal.

68. (Original) The method of Claim 65, wherein selecting one of the analog optical carriers at subscriber comprises selecting one of the analog optical carriers by optical filtering.

69. (Currently Amended) An optical network system for supporting multiple service providers, comprising:

a first data service hub for supplying a first set of video services from a first service provider comprising:

a first optical transmitter for modulating a first analog optical carrier having a first wavelength with a first electrical analog broadcast radio-frequency signal;

a second optical transmitter for modulating a first digital optical carrier having a second wavelength with a first electrical digital data signal;

a second data service hub for supplying a second set of video services from a second service provider comprising:

a ~~second~~ third optical transmitter for modulating a second analog optical carrier having a ~~second~~ third wavelength with a second electrical analog broadcast radio-frequency signal;

a fourth optical transmitter for modulating a second digital optical carrier having a fourth wavelength with a second electrical digital data signal;

an optical waveguide communicating the first ~~[[and]]~~, second, third, and fourth optical carriers between the first data service hub and the second data service hub.

70. (Original) The system of Claim 69, further comprising a subscriber optical interface that includes a service provider selection device for selecting one of the analog optical carriers.

71. (Original) The system of Claim 70, wherein the service provider selection device comprises an optical filter.

[The remainder of this page has been intentionally left blank.]

72. (Currently Amended) A method for supporting broadcast and data services from multiple sources operating within a single optical network, comprising:

modulating a first analog optical carrier having a first wavelength with a first electrical analog broadcast radio-frequency signal from a first service provider at a data service hub;

modulating a second analog optical carrier having a second wavelength with the second electrical analog broadcast radio-frequency signal from a second service provider at the data service hub;

modulating a digital optical carrier having a third wavelength with a digital electrical data signal at the data service hub;

propagating the first and second analog optical carriers and digital optical carrier through separate optical waveguides away from the data service hub;

combining the first and second analog optical carriers together with the digital optical carrier; and

propagating the combined optical carriers through one optical waveguide towards a subscriber[[:]].

73. (Original) The method of Claim 72, further comprising selecting one of the analog optical carriers at a subscriber optical interface.

74. (Original) The method of Claim 72, further comprising separating the analog optical carriers from the digital optical carrier at a subscriber optical interface.

75. (Original) The method of Claim 72, further comprising:

converting the digital optical carrier to a digital electrical data signal at a subscriber optical interface; and

filtering the digital electrical data signal.